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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,533	07/31/2001	Daniel C. Biederman	CISCP209/3895	5963
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BEYER WEAVER & THOMAS LLP			HAILE, FEBEN	
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2663

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/920,533

Applicant(s)

BIEDERMAN, DANIEL C.

Examiner

Feben M. Haile

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 14-24, 28-37 and 41-45 is/are rejected.
- 7) ☒ Claim(s) 9-13, 25-27, and 38-40 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Response to Amendment

1. In view of applicant's amendment filed June 6, 2005, the status of the application is still pending with reference to claims 1-45.
2. The amendment filed is insufficient to overcome the rejection of claims 1-8, 14-24, 28-37, and 41-45 and the objection of claims 9-13, 25-27, and 38-40 based upon the last Office action because:

Regarding claims 1, 17, 30, and 42, the addition: ... wherein problems related to change in size of the second data may result from converting the second data from the first to the second protocol fails to further limit the scope of the claim. In previous methods, for communication between an IPv4 and IPv6 terminal to occur, a fixed pattern of 96 bits has to be added to the IPv4 address **(column 2 lines 22-26)**, which will increase the size of the data. A problem with this technique is that the IPv4 address has to be fixedly allocated to all of the IPv6 terminals thus further consuming the IPv4 address which is short and accelerates its shortage **(column 2 lines 43-47)**.

Regarding claims 4, 20, 33, and 45, the addition: ... wherein the protocol parameter indicates a limit to the size of the second data fails to further limit the scope of the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3, 14-17, 19, 28-30, 32, 41-42, and 44 rejected under 35 U.S.C. 102(e) as being anticipated by Tsuchiya et al. (US 6,690,669), hereinafter referred to as Tsuchiya.

Regarding claims 1 and 42, Tsuchiya discloses a method comprising: determining information related to converting data from a first protocol to a second protocol (**column 6 lines 57-63; an IPv4 terminal transmits an inquiry message for the IP address corresponding to an IPV6 terminal through an IPv4-IPv6 converting apparatus**); and modifying a protocol parameter of a first data based on the determined information to thereby avoid problems associated with a second data sent after the first data (**column 8 lines 31-40; an IP header converting means extracts the IPv4 address from the IPv4 source address field of an IPv4 packet and converts the IPv4 address into an IPv4-mapped IPv6 address and sets it into an IPv6 source address field of an IPv6 packet**), wherein problems may result from converting the second data from the first to the second protocol (**column 2 lines 44-48; when communicating between an IPv4 and IPv6 terminal, an IPv4 address is fixedly allocated to the IPv6 terminal that communicates with the IPv4 terminal, which consumes the already short IPv4 address and accelerates the shortage**).

Regarding claims 3 and 44, Tsuchiya discloses wherein the first protocol is IPv4 and the second protocol is IPv6 (**column 1 lines 11-13; an IPv4 terminal communicates with an IPv6 terminal through an IPv5-IPv6 converting apparatus**).

Regarding claim 14, Tsuchiya discloses comprising converting the first data from the first to the second protocol and the second data from the second to the first protocol (**column 2 lines 7-17; IP tunneling is achieved when an IPv6 network exists between IPv4 terminals**).

Regarding claim 15, Tsuchiya discloses wherein converting data from a first protocol to a second protocol is accomplished by performing network address protocol translation (NAT-PT) (**column 1 lines 11-13; an IPv4 terminal communicates with an IPv6 terminal through and IPv4-IPv6 converting apparatus**).

Regarding claim 16, Tsuchiya discloses wherein converting data from a first protocol to a second protocol is accomplished by tunneling (**column 2 lines 7-17; IP tunneling is achieved when an IPv6 network exists between IPv4 terminals and an IPv4 packet is encapsulated by an IPv6 header**).

Regarding claims 17 and 30, Tsuchiya discloses one or more processors (**figure 1 unit 11 and column 5 lines 66-column 6 lines 2; an IPv4-IPv6 converting apparatus includes a an IP header converting means for performing an IP header conversion of an IPv4 packet and IPv6 packet constructed by a CPU**); one or more memory (**figure 1 unit 13 and column 6 lines 3-8; an IPv4-IPv6 converting apparatus includes a DNS substituting**

means for capturing domain information from a DNS server in the IPv4 and IPv6 networks and is constructed by a RAM), wherein at least one of the processors and memory are adapted to: determine information related to converting data from a first protocol to a second protocol (column 6 lines 57-63; an IPv4 terminal transmits an inquiry message for the IP address corresponding to an IPV6 terminal through an IPv4-IPv6 converting apparatus); and modify a protocol parameter of a first data based on the determined information to thereby avoid problems associated with a second data sent after the first data (column 8 lines 31-40; an IP header converting means extracts the IPv4 address from the IPv4 source address field of an IPv4 packet and converts the IPv4 address into an IPv4-mapped IPv6 address and sets it into an IPv6 source address field of an IPv6 packet), wherein problem(s) may result from converting the second data from the first to the second protocol (column 2 lines 44-48; when communicating between an IPv4 and IPv6 terminal, an IPv4 address is fixedly allocated to the IPv6 terminal that communicates with the IPv4 terminal, which consumes the already short IPv4 address and accelerates the shortage).

Regarding claims 19 and 32, Tsuchiya discloses wherein the first protocol is IPv4 and the second protocol is IPv6 (column 1 lines 11-13; an IPv4 terminal communicates with an IPv6 terminal through and IPv4-IPv6 converting apparatus).

Regarding claims 28 and 41, Tsuchiya discloses wherein converting data from a first protocol to a second protocol is accomplished by performing

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network address protocol translation (NAT-PT) (**column 1 lines 11-13; an IPv4 terminal communicates with an IPv6 terminal through and IPv4-IPv6 converting apparatus**).

Regarding claim 29, Tsuchiya discloses wherein converting data from a first protocol to a second protocol is accomplished by tunneling (**column 2 lines 7-17; IP tunneling is achieved when an IPv6 network exists between IPv4 terminals and an IPv4 packet is encapsulated by an IPv6 header**).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 4-8, 18, 20-24, 31, 33-37, 43 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (US 6,690,669), hereinafter referred to as Tsuchiya, and in view of Tobagi et al. (US 2002/0080721), hereinafter referred to as Tobagi.

Regarding claims 2 and 43, Tsuchiya discloses the limitations of base claims 1 and 42.

Tsuchiya fails to teach wherein the avoided problems are selected from a group consisting of fragmentation of data, dropping of data, and retransmission of data.

Tobagi discloses an implementation of a rate control module that reduces the frequency of dropped packets (segments) **(page 4 paragraph 0044)**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tsuchiya to incorporate the rate control module taught by Tobagi. The motivation being reducing the number of lost data packets in a transmission reduces the quantity of segments lost by other traffic.

Regarding claims 4 and 45, Tsuchiya discloses wherein the protocol parameter indicates a limit to a size of the second data **(column 8 lines 31-40; an IP header converting means extracts the IPv4 address from the IPv4 source address field of an IPv4 packet and converts the IPv4 address into an IPv4-mapped IPv6 address of 128 bits by adding a fixed pattern of 96 bits and sets it into an IPv6 source address field of an IPv6 packet)**, and the problems associated with the protocol translation are based on the size of the second data **(column 2 lines 44-48; when communicating between an IPv4 and IPv6 terminal, an IPv4 address is fixedly allocated to the IPv6 terminal that communicates with the IPv4 terminal, which consumes the already short IPv4 address and accelerates the shortage)**.

Regarding claim 5, Tsuchiya as fails to teach wherein herein the protocol parameter is related to a buffer size.

Tobagi discloses the management of data transfer rates under TCP/IP protocols in a network communications environment **(page 1 paragraph 0002)** where parameters, such as buffer sizes, are varied in response to the performance of the network **(page 4 paragraph 0044)**.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tsuchiya to incorporate the management system taught by Tobagi. The motivation being to reconcile the effect that the transmission parameters have on other network traffic.

Regarding claim 6, Tsuchiya as fails to teach wherein the protocol parameter is a window size.

Tobagi discloses the management of data transfer rates under TCP/IP protocols in a network communications environment (**page 1 paragraph 0002**) where parameters, such as window sizes, are varied in response to the performance of the network (**page 4 paragraph 0044**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tsuchiya to incorporate the management system taught by Tobagi. The motivation being the same as in claim 5.

Regarding claim 7, Tsuchiya as fails to teach wherein the protocol parameter is related to a maximum data allowed in transmission.

Tobagi discloses the management of data transfer rates under TCP/IP protocols in a network communications environment (**page 1 paragraph 0002**) by moderating the size of data blocks sent by a sender (**page 2 paragraph 0021**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tsuchiya to incorporate the management system taught by Tobagi. The motivation being the same as in claim 5.

Regarding claim 8, Tsuchiya as fails to teach wherein the protocol parameter is a maximum segment size.

Tobagi discloses the management of data transfer rates under TCP/IP protocols in a network communications environment (**page 1 column 0002**) wherein a single TCP segment carries an amount of data equal to the maximum segment size (**page 4 paragraph 0009**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tsuchiya to incorporate the management system taught by Tobagi. The motivation being the same as in claim 5.

Regarding claims 18 and 31, Tsuchiya discloses the limitations of base claims 17 and 30.

Tsuchiya fails to teach wherein the avoided problems are selected from a group consisting of fragmentation of data, dropping of data, and retransmission of data.

Tobagi discloses an implementation of a rate control module reduces the frequency of dropped packets (segments) (**page 4 paragraph 0044**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tsuchiya to incorporate the rate control module taught by Tobagi. The motivation being reducing the number of lost data packets in a transmission reduces the quantity of segments lost by other traffic.

Regarding claims 20 and 33, Tsuchiya discloses wherein the protocol parameter indicates a limit to a size of the second data (**column 8 lines 31-40**; **an IP header converting means extracts the IPv4 address from the IPv4**

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source address field of an IPv4 packet and converts the IPv4 address into an IPv4-mapped IPv6 address of 128 bits by adding a fixed pattern of 96 bits and sets it into an IPv6 source address field of an IPv6 packet), and the problems associated with the protocol translation are based on the size of the second data (column 2 lines 44-48; when communicating between an IPv4 and IPv6 terminal, an IPv4 address is fixedly allocated to the IPv6 terminal that communicates with the IPv4 terminal, which consumes the already short IPv4 address and accelerates the shortage).

Regarding claims 21 and 34, Tsuchiya as fails to teach wherein herein the protocol parameter is related to a buffer size.

Tobagi discloses the management of data transfer rates under TCP/IP protocols in a network communications environment (page 1 paragraph 0002) where parameters, such as buffer sizes, are varied in response to the performance of the network (page 4 paragraph 0044).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tsuchiya to incorporate the management system taught by Tobagi. The motivation being to reconcile the effect that the transmission parameters have on other network traffic.

Regarding claims 22 and 35, Tsuchiya as fails to teach wherein the protocol parameter is a window size.

Tobagi discloses the management of data transfer rates under TCP/IP protocols in a network communications environment (page 1 paragraph 0002)

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where parameters, such as window sizes, are varied in response to the performance of the network (**page 4 paragraph 0044**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tsuchiya to incorporate the management system taught by Tobagi. The motivation being the same as in claims 21 and 34.

Regarding claims 23 and 36, Tsuchiya as fails to teach wherein the protocol parameter is related to a maximum data allowed in transmission.

Tobagi discloses the management of data transfer rates under TCP/IP protocols in a network communications environment (**page 1 paragraph 0002**) by moderating the size of data blocks sent by a sender (**page 2 paragraph 0021**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tsuchiya to incorporate the management system taught by Tobagi. The motivation being the same as in claims 21 and 34.

Regarding claims 24 and 37, Tsuchiya as fails to teach wherein the protocol parameter is a maximum segment size.

Tobagi discloses the management of data transfer rates under TCP/IP protocols in a network communications environment (**page 1 column 0002**) wherein a single TCP segment carries an amount of data equal to the maximum segment size (**page 4 paragraph 0009**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tsuchiya to incorporate the management system taught by Tobagi. The motivation being the same as in claims 21 and 34.

Allowable Subject Matter

5. Claims 9-13, 25-27, and 38-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed June 6, 2005 have been fully considered but they are not persuasive.

On page 10 of the amendment, applicant respectfully argues that Tsuchiya fails to address problems that arise when the conversion process for data between the two protocols changes the size of the data. Examiner respectfully disagrees because Tsuchiya discloses that in previous methods, for communication between an IPv4 and IPv6 terminal to occur, a fixed pattern of 96 bits has to be added to the IPv4 address (**column 2 lines 22-26**), which will increase the size of the data. A problem that arises with this technique is that the IPv4 address has to be fixedly allocated to all of the IPv6 terminals thus further consuming the IPv4 address which is short and accelerates its shortage (**column 2 lines 43-47**).

On page 10 of the amendment, applicant respectfully argues that the combination of Tobagi in light of Tsuchiya, does not disclose or suggest the adjustment of a data size protocol parameter of a first data so as to avoid problems related to a data size change that may result from protocol translation. Examiner respectfully disagrees because Tsuchiya discloses a method that will eliminate the problems that arise when an IPv4 address is extended for

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communication between an IPv4 and IPv6 terminal (**column 3 lines 59-67**) and Tobagi discloses a method that will reduce the frequency of dropped packets by limiting the window size (**page 4 column 0044**). These references are well suited for combination because they both provide solutions to problems that are associated with the adjustment of data size, where Tsuchiya's problems arise from protocol translation.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

a) Asano et al. (US 20030185236), Method and Apparatus for Translating Protocol

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Feben M. Haile whose telephone number is (571) 272-3072. The examiner can normally be reached on 6:00am - 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


RICKY NGO
PRIMARY EXAMINER
8/10/05